

Department of Marine Resources
Site Review #2016-10E

Maine Oyster, Inc.
62 Pine Street
Freeport, ME 04032
207-221-5172

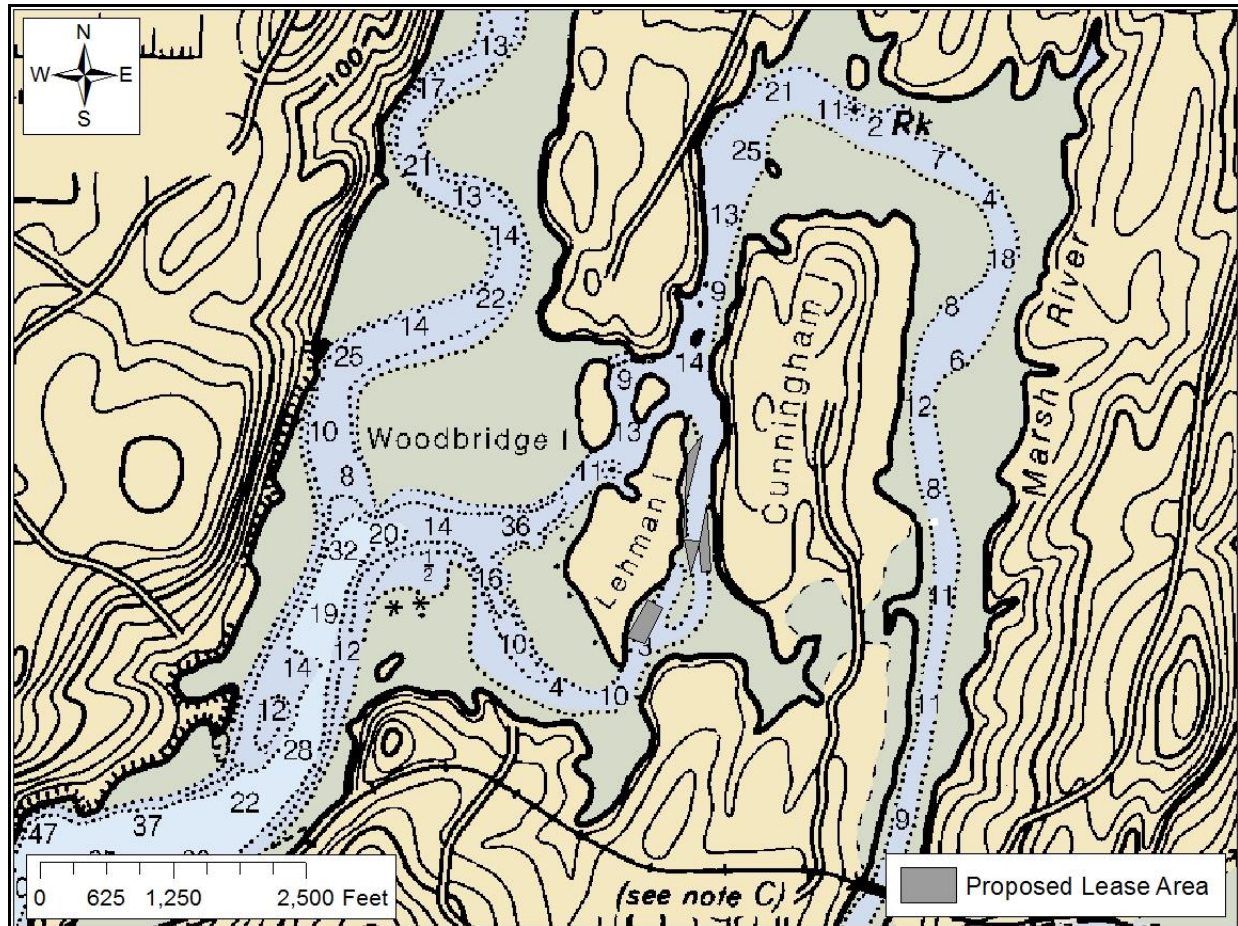


Figure 1*: Vicinity Map

Location: East of Lehman Island, Upper Sheepscot River, Newcastle, Lincoln County, Maine

Purpose: Experimental lease for the bottom culture of American oysters (*Crassostrea virginica*)

Site Review by: Jon Lewis, Marcy Nelson, and Flora Drury

Report Preparation by: Flora Drury, Marcy Nelson, and Jon Lewis

March 22, 2017

* All figures in this report were created in ArcMap version 10.4 using digitized NOAA Nautical Charts or geo-referenced aerial photographs provided by The Maine Office of GIS (Low_Tide_2004).

On September 15, 2016 Maine Department of Marine Resources (MDMR) Scientists Jon Lewis, Marcy Nelson, and Flora Drury visited the proposed lease on the east side of Lehman Island in the Sheepscot River. MDMR staff arrived on site at approximately 11:55am; the tide was in the ebb stage. Observations of wildlife, navigation, and riparian ingress and egress in and around the proposed lease site were made at this time. MDMR staff revisited the site on December 8, 2016 to collect water depths within the proposed boundaries. On this date, MDMR staff arrived onsite at 10:24am and conducted depth collections between 10:24am and 10:47am. Low tide in Wiscasset, Maine was predicted to be 0.76 feet above MLW at 11:21am on December 8, 2016.

The applicant is requesting 3.91 acres for the bottom culture of American oysters (*Crassostrea virginica*) near Lehman Island in the Sheepscot River. This proposed experimental lease consists of four separate tracts referred to as Tract 1 – Tract 4 for the remainder of this report (Figure 2). No gear is proposed for this lease with the exception of marker buoys to indicate lease corners. The applicant proposes to plant the area with American oysters (*C. virginica*) and harvest with a skiff drawn drag.

General Characteristics

The proposed lease occupies shallow waters in the channel located between Lehman Island and Cunningham Island in the Sheepscot River. Houses, a boathouse, and docks were observed within 1,000 feet of the proposed lease site (Figure 2). A mixed forest dominates the nearby upland. The applicant currently utilizes the channel in question for aquaculture activities; two existing aquaculture leases (SHE LE and SHE LE2) along with pending lease #2016-06E are held by the applicant and are located nearby the proposal (Figure 3).



Figure 2*



Figure 3*



Image 1: Looking south from within proposed Tract 1(December 8, 2016).



Image 2: Looking south from northern boundary of Tract 2 (September 15, 2016).



Image 3: Looking north from southern boundary of Tract 2 (September 15, 2016).



Image 4: Looking south from Tract 4 to boathouse and dock (September 15, 2016).

Depth

High tide for Wiscasset, Maine on December 08, 2016 was predicted to be 9.52 feet above mean low water (MLW) and to occur at 5:22am. The predicted time of low tide for Wiscasset, Maine on December 08, 2016 was 11:21am. Tidal height was predicted at 0.76 feet above mean low water.

Wiscasset, Sheepscot River (44.000° N, 69.6667° 'W)¹

Date	Time	Height
12/08	05:22 AM	9.52 H
12/08	11:21 AM	0.76 L
12/08	05:43 PM	9.46 H
12/08	11:46 PM	0.18 L

MDMR scientists collected depths within the proposed site between 10:24am and 11:13am. Water depths ranged from 1 foot at Corner B to 9.4 feet at Corner O. Correcting to the nearest high water (+9.46'), results in water depths roughly 9 feet greater than depths observed during the Department's site visit. Correcting to mean low water (+/- 0.0') results in water depths roughly 1 foot less than depths observed.

¹ <http://tbone.biol.sc.edu/tide/tideshow.cgi?site=Wiscasset%2C+Sheepscot+River%2C+Maine&units=f>

Currents

On their December 8, 2016 site visit, MDMR scientists observed strong currents in the vicinity of the proposed lease site, when the tide was ebbing.

Position and Distances to Shore

On September 15, 2016 and December 08, 2016 MDMR scientists utilized WAAS (Wide Area Augmentation System) GPS to navigate to each corner of the proposed lease site. POSAID Positioning Software was used to verify the distances and bearings between proposed lease corners. Distances to shore were determined using the measuring tool in ArcMap 10.4, digitized NOAA Charts, digital orthophotography provided by the Maine Office of GIS, Google Earth, and the application coordinates listed below.

Application Coordinates (WGS84)

Total Acreage: 3.91 Acres

The following coordinates differ from those originally submitted but occur within the applicant's original tracts. The coordinates were moved to decrease the total acreage of the proposed lease to less than four acres and to ensure that all of the proposed lease tracts are subtidal.

Tract 1: 0.93 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
A	44° 01.673'N	69° 36.851'W then 237 feet at 218° True to
B	44° 01.642'N	69° 36.884'W then 778 feet at 182° True to
C	44° 01.514'N	69° 36.891 'W then 31 feet at 79° True to
D	44° 01.515'N	69° 36.884'W then 334 feet at 359° True to
D2	44° 01.570'N	69° 36.885'W then 643 feet at 13° True to "A"

Tract 2: 0.92 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
E	44° 01.565'N	69° 36.842'W then 382 feet at 189° True to
F	44° 01.503'N	69° 36.856'W then 256 feet at 176° True to
G	44° 01.461'N	69° 36.852'W then 92 feet at 86° True to
H	44° 01.462'N	69° 36.831'W then 628 feet at 356° True to "E"

Tract 3: 0.51 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
I	44° 01.509'N	69° 36.856'W then 145 feet at 275° True to
J	44° 01.511'N	69° 36.889'W then 316 feet at 169° True to

K 44° 01.460'N 69° 36.875'W then 309 feet at 16° True to "I"

Tract 4: 1.55 Acres

<u>Corner</u>	<u>Latitude</u>	<u>Longitude</u>
L	44° 01.405'N	69° 36.933'W then 166 feet at 296° True to
M	44° 01.417'N	69° 36.967'W then 402 feet at 209° True to
N	44° 01.359'N	69° 37.011'W then 181 feet at 110° True to
O	44° 01.349'N	69° 36.972'W then 381 feet at 27° True to "L"

Tract 1: Approximate Distances to Shore (Figure 3)

Corner "A" to Dock	~230 feet to the northeast
Boundary "B-C" to Nearest Point, Lehman Island (MLW)	~1 foot to the west
Boundary "A-D2" to Nearest Point, Cunningham Island (MLW)	~120 feet to the east
Boundary "D1-D2" to Nearest Point, Cunningham Island (MLW)	~190 feet to the east

Tract 2: Approximate Distances to Shore (Figure 3)

Boundary "E-H" to Nearest Point, Cunningham Island (MLW)	~1 foot to the east
Corner G to Nearest Point, Lehman Island (MLW)	~285 feet to the west
Corner F to Lehman Island (MLW)	~170 feet to the west
Boundary "E-F" to SHE LE	~1 foot to the west
Boundary "F-G" to SHE LE2	Overlapping

Tract 3: Approximate Distances to Shore (Figure 3)

Corner "I" to Cunningham Island	~85 feet to the east
Corner "I" to SHE LE	~1 foot to the north
Corner "J" to Lehman Island	~15 feet to the west
Boundary "I-K" to SHE LE2	Overlapping

Tract 4: Approximate Distances to Shore (Figure 3)

Corner "O" to Boathouse	~225 feet to the south
Corner "O" to Dock	~450 feet to the south
Corner "O" to mainland (MLW)	~65 feet to the southeast
Corner "M" to Lehman Island (MLW)	~10 feet to the west
Boundary "M-L" to SHE LE2	~25 feet to the northeast
Corner "N" to Lehman Island (MLW)	~4 feet to the west
Corner "N" to Proposed Lease 2016-06E	~840 feet to the west

The criteria MDMR uses to determine the suitability of an experimental aquaculture operation to a particular area (DMR Regulations Chapter 2.64(7) (A)) are discussed, with respect to the proposal, below:

(1) Riparian Owners Ingress and Egress

Two houses with docks were observed on the eastern shore of the channel proposed for aquaculture activity (Figure 2). One dock is located on Cunningham Island ~230 feet northeast of the proposed lease site and the second dock sits ~450 feet south of the proposed lease site. At the time of the Department's site visit in September of 2016, ramps and floats were attached to both docks (Figure 2, Image 4). A boathouse located ~225 feet to the south of the proposed site was also observed (Figure 2, Image 4).

Due to the fact that the applicant proposes to use the area for the bottom culture of American oysters, and does not propose to use any gear on the site with the exception of corner markers required by MDMR Regulations Chapter 2.80, it is unlikely that this proposed lease will impede the ingress and egress of riparian owners.

2) Navigation

The lease in question proposes the bottom culture of American oysters and, with the exception of corner markers required by MDMR Regulations Chapter 2.80, does not propose to use any suspended gear. It is unlikely that navigation will be impeded by the proposed lease, with the exception of times during which harvest is occurring via skiff drawn drag. At low tide the navigable channel becomes narrow; in the event of low tide drag harvesting other vessels may have limited room to navigate the channel.

The main channel of the Sheepscot River lies more than 2,000 feet to the west of the proposed activities.

(3) Fishing

No fishing within the vicinity of the proposed lease site was observed on September 15, 2016 or December 8, 2016. It is likely that commercial clamming and worming, along with recreational fishing for striped bass (*Morone saxatilis*), occur in the area. It is also possible that wild oysters are harvested in the vicinity of the area discussed. The proposed lease is unlikely to disrupt most commercial or recreational fishing in the area as it will not be populated with gear. Additionally, the applicant has declared that their "activities would not exclude nor inhibit lobstering or angling in the area of the lease". With appropriate permits the wild harvest of oysters would be allowed in the waters and intertidal zones surrounding, but not within, the proposed lease site.

(4) Other Aquaculture Uses

The names and distances to the DMR leases and licenses nearest the proposal are listed below. Distances were measured, straight-line, in ArcMap version 10.4. Figures 3 and 4 display nearby aquaculture leases and licenses.

The applicant, **Maine Oyster, Inc.**, has two existing aquaculture leases for the culture of American oysters located within 1 mile of the proposed experimental lease. **SHE LE2**, a 1.57 acre lease overlaps with Tract 2 and Tract 3 of the proposed lease. **SHE LE**, a 2.97 acre lease, shares its western boundary with Tract 1 of the proposed lease. Additionally, Maine Oyster, Inc. has a pending lease currently referred to by its **DMR Docket #2016-06E** that sits ~840 feet to the west of the proposed lease.

Paul Farmer has a LPA license for the culture of American oysters (**FARM114**) ~0.66 miles to the northeast.

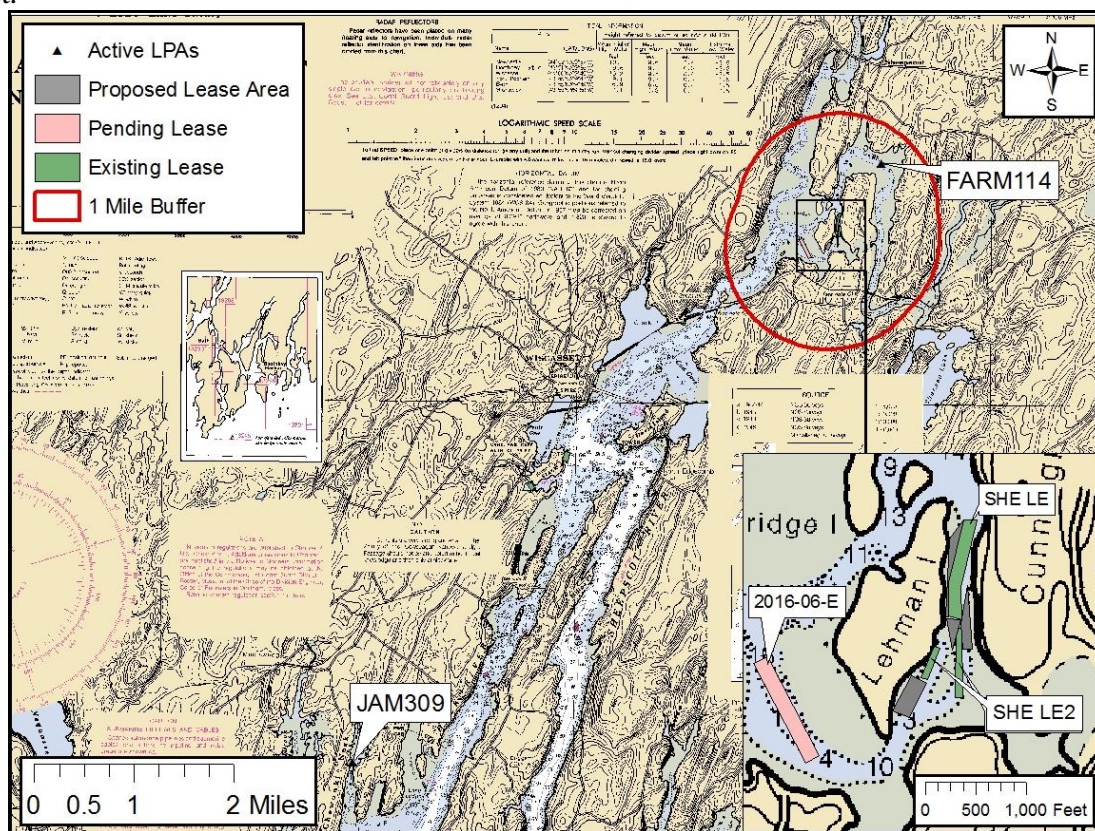


Figure 4*: Nearby aquaculture leases and licenses

(5) Existing System Support

DMR Regulation 2.64 (3) does not require an underwater site assessment for proposed experimental leases and as result of this DMR scientists did not dive the proposed site. From a previous dive off the southeast side of Lehman Island in September, 2016 DMR scientists documented sugar kelp (*Saccharina latissima*) and sea lettuce (*Ulva lactuca*) along with other Phaeophyta and Rhodophyta. Green crabs (*Carcinus maenas*) and hermit crabs (*Pagurus sp.*) were also observed.

Red beard sponge (*Microciona prolifera*), knotted wrack (*Ascophyllum nodosum*), rockweed (*Fucus sp.*), brushy red-weed (*Cystoclonium purpureum*), worm tubes from *Polydora spp.*, American oysters (*Crassostrea virginica*), rock crab (*Cancer irroratus*), horseshoe crab (*Limulus polyphemus*), green crabs (*Carcinus maenas*) and hermit crabs (*Pagurus sp.*) were observed by DMR scientists on a dive directly east of proposed Tract 1 in August of 2004.

On the December 8, 2016 site visit, DMR scientists observed piles of cultchless oysters in the intertidal zone nearby the proposed lease site (Image 5). These piles were suspected to be the result of the skiff-drawn drag harvest method utilized by Maine Oyster, Inc. on their existing leases (SHE LE and SHE LE2).

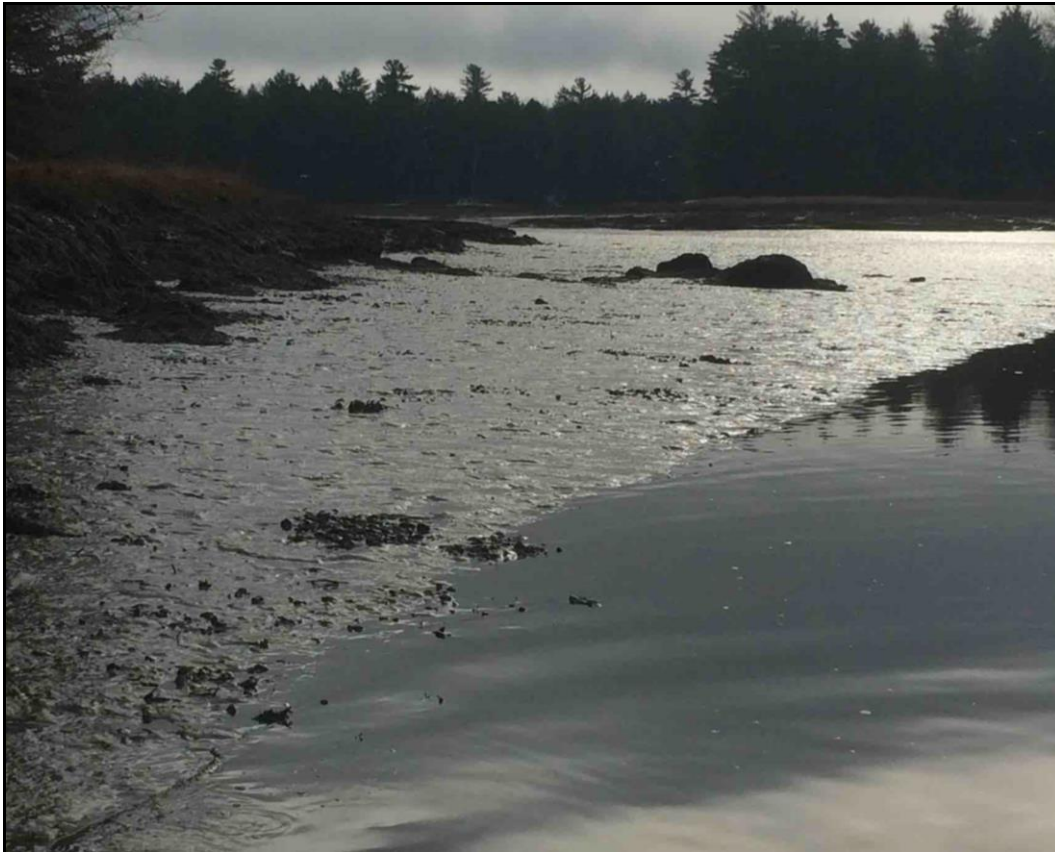


Image 5: Pile of cultchless oysters in the intertidal zone nearby proposed lease (December 8, 2016).

Eelgrass (*Z. marina*)

Historical records of eelgrass distribution do not indicate the presence of this species in the discussed area (Figure 5).

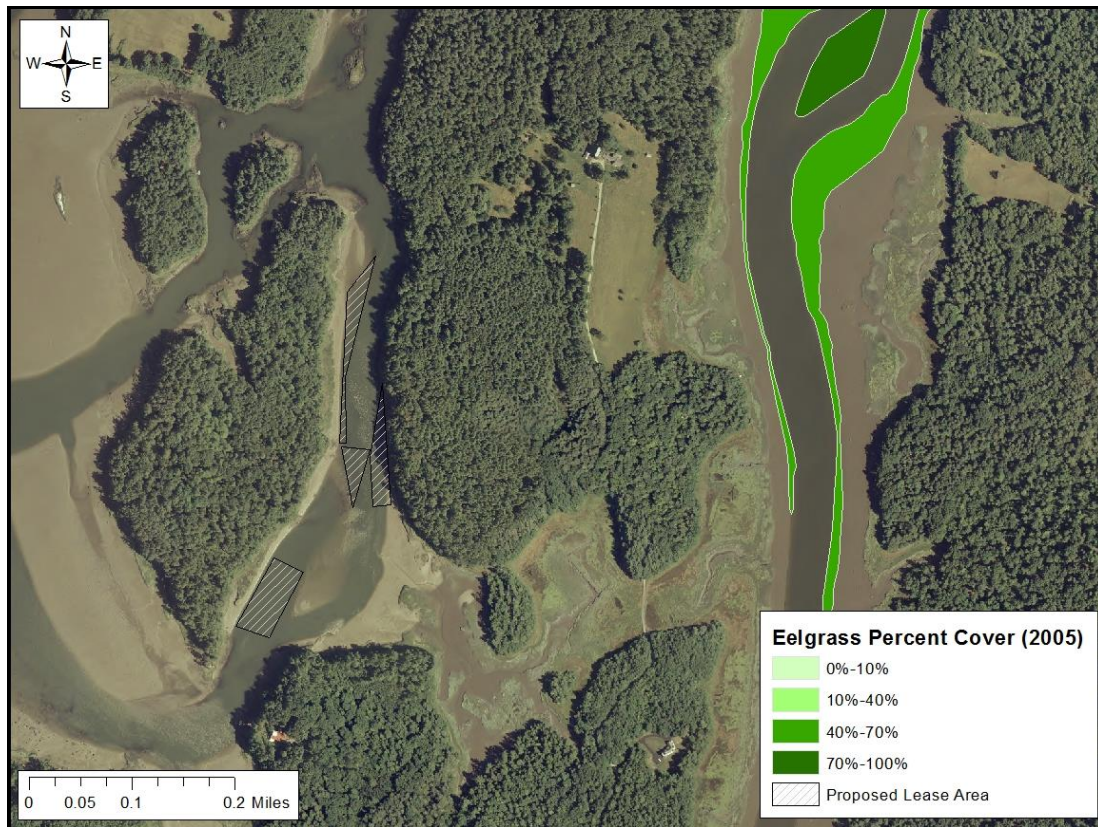


Figure 5*

Wildlife

Double-crested cormorants (*Phalacrocorax auritus*), yellowlegs (*Totanus sp*), and a bald eagle (*Haliaeetus leucocephalus*) were observed by MDMR scientists in the vicinity of the proposed lease site on September 15, 2016. Herring gulls (*Larus argentatus*) were observed on December 08, 2016. Corner H of Tract 2 overlaps with Tidal Waterfowl/Wading Bird Habitat classified by The Maine Department of Inland Fisheries and Wildlife (Figure 5). A copy of the application was sent to the Maine Department of Inland Fisheries and Wildlife on September 1, 2016. According to John MacLaine (Reviewing Biologist), in comments submitted to MDMR on January 9, 2017, “our Department expects minimal impacts to wildlife may be anticipated from this project”.



Figure 5*

(6) Interference with Public Facilities

There are no public docking facilities, public beaches, or conserved lands owned by federal, state, or municipal government within 1,000 feet of the proposed lease (Maine Office of GIS: *Conserved_Lands* published 07/15/2016).

(7) Water Quality Classification

The proposed lease is in an area currently classified by the Department of Marine Resources Water Quality Classification program as “open/approved for the harvest of shellfish”.